

PECO Energy Company 1848 Lay Road Delta, PA 17314-9032 717 456 4244 April 7, 1997

Document Control Desk U. S. Nuclear Regulatory Commission Washington, DC 20555

Docket Nos. 50-278

Licensee Event Report, Peach Bottom Atomic Power Station Unit 3 SUBJECT:

This LER concerns a manual reactor scram due to a loss of forced reactor core circulation at power as a result of a 13kv feeder breaker auxiliary switch failure.

Reference:

Docket No. 50-278

Report Number:

3-97-002

Revision Number: 00

Event Date:

3/09/97

Report Date:

4/07/97

Facility:

Peach Bottom Atomic Power Station 1848 Lay Road, Delta, PA 17314

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Sincerely,

GDE\RGA:rga

enclosure

CC:

B. Gorman, Public Service Electric & Gas

Combre 2 80 Hunger

R. R. Janati, Commonwealth of Pennsylvania

INPO Records Center

H. J. Miller, US NRC, Administrator, Region I

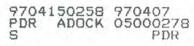
R. I. McLean, State of Maryland

W. L. Schmidt, US NRC, Senior Resident Inspector

A. F. Kirby III, DelMarVa Power

H. C. Schwemm, VP - Atlantic Electric

IEDA





NRC FORM 366 (6-89)

FACILITY NAME (1)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

DOCKET NUMBER (2)	PAGE (3)			
REGULATORY COMMISSION, WASHINGTON, DC 2055 THE PAPERWORK REDUCTION PROJECT (3150-010 OF MANAGEMENT AND BUDGET, WASHINGTON, DC:				

TITLE (4) Manual Scram Due to a Loss of Forced Reactor Core Circulation at Power as	a Result of				
a 13kv Feeder Breaker Auxiliary Switch Failure					
EVENT DATE (5) LER NUMBER (6) REPORT DATE (7) OTHER FACILITIES INVOLVED (8)					
MONTH DAY YEAR YEAR SEQUENTIAL REVISION MONTH DAY YEAR FACILITY NAMES DOCKET NU 0 5 0					
	1010111				
OPERATING MODE (9) THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10) 0 1 4 20.405(a)(1)(ii) 50.36(c)(2) 50.73(a)(2)(vii) 73.71(a)(2)(viii) 73.71(a)(2)(a)(2)(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)					
20.405(a)(1)(iii) 50.73(a)(2)(i) 50.73(a)(2)(viii)(A) 366AI 20.405(a)(1)(iv) 50.73(a)(2)(ii) 50.73(a)(2)(viii)(B) 20.405(a)(1)(v) 50.73(a)(2)(iii) 50.73(a)(2)(x)	366AI				
LICENSEE CONTACT FOR THIS LER (12)					
George Lengyel TELEPHONE AREA CODE 7 1,7 4 5,6	1 7 0 1 4				
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)					
CAUSE SYSTEM COMPONENT MANUFACTURER REPORTABLE TO NPROS CAUSE SYSTEM COMPONENT MANUFACTURER REPORTAL TO NPROS					
SUPPLEMENTAL REPORT EXPECTED (14) EXPECTED SUBMISSION	DATH DAY YEAR				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

YES (If yes, complete EXPECTED SUBMISSION DATE)

On 3/9/97, at 0600 hours, the 3B reactor recirculation pump unexpectedly tripped when the Unit 3 main turbine was manually tripped at 14 percent power. The main turbine was tripped during preparations to enter the drywell with the unit in single-loop operation. An auxiliary switch in the #4 13kv feeder breaker failed to change state after a manual bus transfer. This switch verifies the 13kv transfer from the main generator output to off-site sources for the 3B reactor recirculation pump motor logic. Without this transfer verification the 3B reactor recirculation pump motor breaker tripped when the main turbine was manually tripped and the generator locked-out. The unit was manually scrammed, in accordance with procedure, due to the loss of all forced core circulation at power. Examination of the auxiliary switch revealed internal binding due to a buildup of a dirt-like substance on various shaft pieces and contacts. The switch assembly was cleaned, lubricated and exercised until it functioned properly, then reinstalled. A failure analysis will be performed to further pinpoint the failure mechanism and any generic implications. No previous similar events have been identified.

APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P.530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)	PAGE (3)
		YEAR SEQUENTIAL REVISION NUMBER NUMBER	
Peach Bottom Unit 3	0 5 0 0 0 2 7	8 9 7 - 0 0 2 - 0 0	0 2 OF 0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Requirements of the Report

This report is being submitted pursuant to 10CRF50.73 (a)(2)(iv) due to an Engineered Safety Feature (ESF) actuation.

Unit Conditions at Time of Event

Unit 3 was in the "RUN" mode at 14 percent rated thermal reactor power in preparation for a drywell entry to troubleshoot the 3A reactor recirculation pump (EIIS: AD). The 3A reactor recirculation pump was not in service due to receipt of a low oil level alarm. This condition placed the unit in single-loop operation.

Description of the Event

On 3/9/97 at 0600 hours, the 3B reactor recirculation pump unexpectedly tripped when the Unit 3 main turbine was manually tripped at 14 percent power. In preparation for a drywell entry, unit loads, normally fed from the main generator, had been transferred to off-site sources in order to maintain power to the 3B reactor recirculation pump motor. The unit was manually scrammed, in accordance with procedure, due to the loss of all forced core circulation (i.e., natural circulation) at power. The unit was stabilized in the hot shutdown condition prior to notifying the NRC at 0938 hours.

Cause of the Event

The manual scram was initiated, as directed by station procedures, due to the loss of all forced core circulation at power when the 3B reactor recirculation pump tripped.

The auxiliary switch in the 13kv feeder breaker (EIIS: EA) failed to change state due to internal binding of the switch's square shaft that is operated by the plunger assembly. This switch verifies the 13kv transfer as sensed by the reactor recirculation pump motor logic (EIIS: AD). Without this transfer verification, the reactor recirculation pump motor breaker tripped with the manual turbine trip. The binding has been preliminarily attributed to a dirt-like buildup on various shaft pieces and contacts internal to the switch. The switch assembly was repaired and returned to service. A failure analysis will be performed to further verify the failure mechanism and any generic implications.

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U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR		SEQUENTIAL NUMBER		REVISION NUMBER			
Peach Bottom Unit 3	0 5 0 0 0 2 7	8 9 1 7	-	01012	_	00	0	3 OF) 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Analysis of the Event

No actual safety consequences occurred as a result of this event. Although the plant operated for a brief time in natural circulation, there were no thermal hydraulic instability conditions. Prompt action by operations personnel to scram the reactor was a conservative measure required by station procedures to prevent entering a region of power-flow operation where instabilities may occur.

This event could pose a slightly higher challenge to thermal hydraulic instability if the manual turbine trip would have occurred at a higher power level. However, the same conservative actions by operations personnel, an immediate scram, would apply.

The 3B reactor recirculation pump functioned as designed in response to the failure of the #4 13kv feeder breaker auxiliary switch.

Corrective Actions

The auxiliary switch assembly was cleaned, lubricated, verified to operate properly and reinstalled in the #4 13kv feeder breaker cubicle. A failure analysis will be performed on a sample lot of similar auxiliary switches to further verify the failure mechanism and identify any generic implications.

Previous Similar Events

No previous similar events have been identified.